

District 04 Mobility Performance Report

2016 First Quarter

DEPARTMENT OF TRANSPORTATION

May 3, 2016
District 4-Office of Highway Operations

District 04 Mobility Performance Report

2016 First Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 4 is comprised of nine counties that border the San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties. Although these are urban counties, they do contain a large amount of sparsely populated land.

The Mobility Performance quarterly analysis compares information with over a year ago and over last quarter in the following performance measures:

- Vehicle Miles of Travel (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (equivalent lost productivity)
- Detector Health

This information is based on data collected every day of the quarter, twenty-four hours a day, by automated vehicle detector stations deployed on urban-area freeways where congestion is regularly experienced. The MPR presents congestion information at two speed thresholds: delay from vehicles traveling below 35 miles per hour (mph), and delay from vehicles traveling below 60 mph. The delay at the 35 mph threshold represents severe congestion while delay at 60 mph represents all congestion, both light and heavy. These thresholds are set by Caltrans and are based upon engineering experience and District input.

FINDINGS

In the first quarter, total delay equaled 6.9 million VHD at the 35 mph speed threshold, and 14.3 million VHD at the 60 mph threshold. Compared to the same quarter the year before, there was an 18.5% increase in 35 mph total quarterly delay and 15.8% increase in 60 mph total quarterly delay. This increase may be due to the recovering economy and also a 6% increase in good working detector that were able to capture more congestion.

The average weekday delay experienced in this quarter was approximately 99 thousand VHD at 35 mph, and 206 thousand VHD at 60 mph. Friday was the most congested day of the week.

Alameda County with 2.4 million vehicle hours of total delay at 35 mph during the first quarter was the most congested county in the District.

Santa Clara County with 1.6 million vehicle hours of total delay at 35 mph was second most congested county in the District.

Quarterly Mobility Statistics

Measure	Graph	Percentage Change									
Vehicle Miles of Travel (VMT)	<table><tr><th>Quarter</th><th>VMT (Billions)</th></tr><tr><td>2015 Q1</td><td>7.1</td></tr><tr><td>2015 Q4</td><td>7.7</td></tr><tr><td>2016 Q1</td><td>7.5</td></tr></table>	Quarter	VMT (Billions)	2015 Q1	7.1	2015 Q4	7.7	2016 Q1	7.5	Over one year ago	Over last quarter
		Quarter	VMT (Billions)								
2015 Q1	7.1										
2015 Q4	7.7										
2016 Q1	7.5										
		4.8% 	-2.7% 								
Total Vehicle Hours of Delay (VHD) at 35 mph	<table><tr><th>Quarter</th><th>VHD (Millions)</th></tr><tr><td>2015 Q1</td><td>5.8</td></tr><tr><td>2015 Q4</td><td>7.4</td></tr><tr><td>2016 Q1</td><td>6.9</td></tr></table>	Quarter	VHD (Millions)	2015 Q1	5.8	2015 Q4	7.4	2016 Q1	6.9	Over one year ago	Over last quarter
		Quarter	VHD (Millions)								
2015 Q1	5.8										
2015 Q4	7.4										
2016 Q1	6.9										
		18.5% 	-7.2% 								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph	<table><tr><th>Quarter</th><th>VHD (Thousands)</th></tr><tr><td>2015 Q1</td><td>87</td></tr><tr><td>2015 Q4</td><td>106</td></tr><tr><td>2016 Q1</td><td>99</td></tr></table>	Quarter	VHD (Thousands)	2015 Q1	87	2015 Q4	106	2016 Q1	99	Over one year ago	Over last quarter
		Quarter	VHD (Thousands)								
2015 Q1	87										
2015 Q4	106										
2016 Q1	99										
		13.1% 	-6.6% 								
Total Vehicle Hours of Delay (VHD) at 60 mph	<table><tr><th>Quarter</th><th>VHD (Millions)</th></tr><tr><td>2015 Q1</td><td>12.3</td></tr><tr><td>2015 Q4</td><td>15.1</td></tr><tr><td>2016 Q1</td><td>14.3</td></tr></table>	Quarter	VHD (Millions)	2015 Q1	12.3	2015 Q4	15.1	2016 Q1	14.3	Over one year ago	Over last quarter
		Quarter	VHD (Millions)								
2015 Q1	12.3										
2015 Q4	15.1										
2016 Q1	14.3										
		15.8% 	-5.5% 								
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph	<table><tr><th>Quarter</th><th>VHD (Thousands)</th></tr><tr><td>2015 Q1</td><td>184</td></tr><tr><td>2015 Q4</td><td>215</td></tr><tr><td>2016 Q1</td><td>206</td></tr></table>	Quarter	VHD (Thousands)	2015 Q1	184	2015 Q4	215	2016 Q1	206	Over one year ago	Over last quarter
		Quarter	VHD (Thousands)								
2015 Q1	184										
2015 Q4	215										
2016 Q1	206										
		11.6% 	-4.4% 								

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph	<p>Hours (Thousands)</p> <p>2015 Q1 2015 Q4 2016 Q1</p> <p>Mon Tue Wed Thu Fri Sat Sun/Hol</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Wednesday -1%	Wednesday -9.4%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Friday 29.9%	Friday 7.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays	<p>Hours (Thousands)</p> <p>Weekday (2015 Q1) Weekday (2015 Q4) Weekday (2016 Q1)</p> <p>Hour of Day</p>	Largest Magnitude Weekday Decrease over one year ago	Largest Magnitude Weekday Decrease over last quarter
		8 PM -43%	7 AM -14.5%
		Largest Magnitude Weekday Increase over one year ago	Largest Magnitude Weekday Increase over last quarter
		5 PM 11.2%	4 PM 0.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays	<p>Hours (Thousands)</p> <p>Saturday (2015 Q1) Saturday (2015 Q4) Saturday (2016 Q1)</p> <p>Hour of Day</p>	Largest Magnitude Saturday Decrease over one year ago	Largest Magnitude Saturday Decrease over last quarter
		8 PM -26.2%	6 PM -20.8%
		Largest Magnitude Saturday Increase over one year ago	Largest Magnitude Saturday Increase over last quarter
		4 PM 98.1%	2 PM 30.2%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/Holidays	<p>Hours (Thousands)</p> <p>Sunday/Holiday (2015 Q1) Sunday/Holiday (2015 Q4) Sunday/Holiday (2016 Q1)</p> <p>Hour of Day</p>	Largest Magnitude Sun./Holiday Decrease over one year ago	Largest Magnitude Sun./Holiday Decrease over last quarter
		7 AM -17.4%	5 PM -28.5%
		Largest Magnitude Sun./Holiday Increase over one year ago	Largest Magnitude Sun./Holiday Increase over last quarter
		2 PM 84.9%	2 PM 2.3%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph	<p>Hours (Millions)</p> <p>2015 Q1 2015 Q4 2016 Q1</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		San Francisco -29.9%	San Mateo -19.5%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		Alameda 21.4%	—
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph	<p>Miles</p> <p>2015 Q1 2015 Q4 2016 Q1</p> <p>AM Peak (6 AM to 10 AM) Off-Peak Day (10 AM to 3 PM) PM Peak (3 PM to 7 PM) Off-Peak Night (7 PM to 6 AM)</p>	Largest Magnitude Decrease over one year ago	Largest Magnitude Decrease over last quarter
		Off-Peak Night -12.8%	AM Peak -6.2%
		Largest Magnitude Increase over one year ago	Largest Magnitude Increase over last quarter
		PM Peak 13.9%	—
Average Number of Good and Bad Detectors	<p>Number of Detectors</p> <p>Average of Good Average of Bad</p> <p>2015 Q1 2015 Q4 2016 Q1</p>	Change in Good over one year ago	Change in Good over last quarter
		6%	1%
		Change in Bad over one year ago	Change in Bad over last quarter
		-7%	-7%

Congestion by Route											
Route	County	Vehicle Hours of Delay at 35 mph			Difference 2016 Q1-2015 Q1		Difference 2016 Q1-2015 Q4		Rank		
		2015 Q1	2015 Q4	2016 Q1	Absolute	Percentage	Absolute	Percentage	2015 Q1	2015 Q4	2016 Q1
I880	Alameda	647,577	929,857	836,262	188,685	29.1%	-93,595	-10.1%	1	1	1
I80	Alameda	537,231	664,057	614,640	77,410	14.4%	-49,417	-7.4%	2	2	2
US101	San Mateo	498,943	621,968	450,280	-48,664	-9.8%	-171,688	-27.6%	3	3	3
US101	Santa Clara	402,349	497,765	444,425	42,076	10.5%	-53,340	-10.7%	4	4	4
SR85	Santa Clara	229,592	309,785	337,953	108,361	47.2%	28,168	9.1%	10	6	5
I580	Alameda	237,748	291,516	318,136	80,387	33.8%	26,620	9.1%	8	9	6
SR24	Contra Costa	133,149	276,989	317,917	184,768	138.8%	40,928	14.8%	15	10	7
I680	Contra Costa	276,045	325,980	303,521	27,476	10.0%	-22,458	-6.9%	6	5	8
I280	Santa Clara	235,819	301,021	285,548	49,729	21.1%	-15,474	-5.1%	9	8	9
SR4	Contra Costa	149,699	263,532	266,377	116,678	77.9%	2,845	1.1%	14	12	10
I80	Contra Costa	162,143	264,218	257,326	95,183	58.7%	-6,893	-2.6%	13	11	11
US101	San Francisco	208,931	240,184	251,101	42,170	20.2%	10,917	4.5%	12	14	12
I680	Alameda	250,627	255,307	250,719	93	0.0%	-4,588	-1.8%	7	13	13
US101	Marin	217,945	305,809	211,773	-6,172	-2.8%	-94,036	-30.7%	11	7	14
SR84	Alameda	118,465	89,506	142,303	23,838	20.1%	52,797	59.0%	17	23	15
SR237	Santa Clara	121,323	120,120	142,141	20,817	17.2%	22,021	18.3%	16	19	16
I80	Solano	59,482	168,959	130,323	70,841	119.1%	-38,637	-22.9%	29	16	17
I880	Santa Clara	107,847	146,286	129,842	21,995	20.4%	-16,444	-11.2%	18	17	18
I280	San Mateo	65,158	111,693	126,965	61,808	94.9%	15,272	13.7%	25	22	19
SR92	San Mateo	106,486	131,427	122,376	15,890	14.9%	-9,051	-6.9%	19	18	20
SR92	Alameda	78,209	119,802	107,057	28,848	36.9%	-12,745	-10.6%	21	20	21
I680	Santa Clara	59,687	114,271	94,214	34,527	57.8%	-20,057	-17.6%	28	21	22
I80	San Francisco	313,216	197,435	92,603	-220,613	-70.4%	-104,832	-53.1%	5	15	23
SR87	Santa Clara	72,580	77,825	89,955	17,376	23.9%	12,130	15.6%	23	25	24
SR238	Alameda	65,934	49,481	89,349	23,415	35.5%	39,868	80.6%	24	30	25
SR24	Alameda	64,685	84,015	71,101	6,417	9.9%	-12,914	-15.4%	26	24	26
I280	San Francisco	62,571	77,019	66,094	3,522	5.6%	-10,925	-14.2%	27	26	27
SR37	Sonoma	83,609	71,325	62,973	-20,636	-24.7%	-8,352	-11.7%	20	27	28
SR17	Santa Clara	32,223	35,345	55,348	23,125	71.8%	20,003	56.6%	31	33	29
SR37	Marin	75,169	66,294	44,768	-30,401	-40.4%	-21,526	-32.5%	22	29	30
US101	Sonoma	47,007	42,731	39,796	-7,212	-15.3%	-2,935	-6.9%	30	31	31
I580	Contra Costa	21,019	70,163	32,409	11,391	54.2%	-37,754	-53.8%	32	28	32
I680	Solano	4,033	37,849	28,208	24,175	599.4%	-9,641	-25.5%	38	32	33
SR12	Solano	0	0	18,737	18,737		18,737				34
SR37	Solano	6,229	5,421	13,646	7,418	119.1%	8,225	151.7%	36	37	35
SR242	Contra Costa	19,343	5,814	11,489	-7,854	-40.6%	5,675	97.6%	33	35	36
I980	Alameda	494	814	4,611	4,117	833.6%	3,797	466.3%	40	42	37
I380	San Mateo	6,330	7,911	3,073	-3,257	-51.4%	-4,838	-61.2%	35	34	38
SR12	Napa	10,407	2,174	1,182	-9,225	-88.6%	-991	-45.6%	34	40	39
SR152	Santa Clara	1,717	5,070	1,054	-663	-38.6%	-4,016	-79.2%	39	38	40
SR25	Santa Clara	214	1,055	736	523	244.5%	-319	-30.2%	42	41	41
I580	Marin	0	430	664	664		234	54.5%		44	42
I780	Solano	337	4,535	28	-309	-91.7%	-4,507	-99.4%	41	39	43
I80	Napa	24	3	9	-15	-61.1%	7	272.0%	44	46	44
SR29	Napa	146	752	3	-144	-98.3%	-750	-99.7%	43	43	45
I880S	Alameda	4,330	5,624	0	-4,330	-100.0%	-5,624	-100.0%	37	36	
SR13	Alameda	0	0	0	0		0				
SR156	Santa Clara	1	4	0	-1	-100.0%	-4	-100.0%	45	45	
TOTALS		5,796,069	7,399,137	6,869,034	1,072,964	18.5%	-530,103	-7.2%			